UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,140	08/29/2003	Gary L. Graunke	ITL.0896US (P14859)	1168

21906 7590 02/22/2007	EXAMINER	
TROP PRUNER & HU, PC	PERUNGAVOOR, VENKATANARAY	
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HOUSTON, TX 77057-2631	ART UNIT	PAPER NUMBER
	2132	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

	Application No.	Applicant(s)
Office Action Summary	10/652,140	GRAUNKE, GARY L.
	Examiner	Art Unit	
	Venkat Perungavoor	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *1/31/2003*.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

ETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed.

The following title is suggested: Source Code Transformation based on Program

Operators.

Claim Objections

2. Examiner believes Claim 3 should read "...using at least one of said complier-

generated operator...". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

Claims 3,18, recites the limitation "complier-generated operator" in line 2. There

is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by
another filed in the United States before the invention by the applicant for patent or (2) a patent
granted on an application for patent by another filed in the United States before the invention by the
applicant for patent, except that an international application filed under the treaty defined in section
351(a) shall have the effects for purposes of this subsection of an application filed in the United States
only if the international application designated the United States and was published under Article 21(2)
of such treaty in the English language.

5. Claims 9-15 are rejected under 35 U.S.C. 102(e) as being anticipated by US

Patent Publication 2004/0115860 A1 to Johnson et al.(hereinafter Johnson).

6. Regarding Claim 9, Johnson discloses the analyzing the data flow in the source

code having one or more operators to determine matching references of pair of

variables see Par. 0021; determining a block of the source code in which pair of

variable is not used see Par. 0021; associating the matching reference based on

heuristic to provide data encryption to modify a portion of the source code into

encrypted complier-generated code see Par. 0022; mixing the complier-

generated code with source code see Par. 0024.

7. Regarding Claim 10, Johnson discloses the detecting the first and second

variables in which use of stored values for pair of variables for first and second

regions see Par. 0025-0026.

8. Regarding Claim 11, Johnson discloses the utilizing of heuristic to enhance

obfuscation of encrypting compiler-generated code see Par. 0029.

9. Regarding Claim 12, Johnson discloses the identifying the first and second

reference point within a set of blocks having operators see Par. 0026; associating

an encryption code in proximity to the first reference point and associating a

decryption code in proximity to the second reference point see Par. 0021;

compiling a portion of code into encrypting complier-generated code to mix with

the source code see Par. 0024-0025.

10. Regarding Claim 13, Johnson discloses the customizing a cipher based on

program operators see Par. 0023; selecting a block from a set of blocks, the

block containing a first variable having a maximum distance over set blocks and

second variable having a next maximal distance in the same block see Par.

0066; providing the encryption code to encrypt data in between a pair of

references to first and second variables see Par. 0067-0068; providing the

decryption code to decrypt data see Par. 0070.

11. Regarding Claim 14, Johnson discloses the recompiling the encrypting compiler-

generated code with the source code into tamper resistant object code see Par.

0020.

12. Regarding Claim 15, Johnson discloses the deriving from the source code a

complier-generated operator for data flow transformation see Par. 0019; using

the complier-generated code and source code to provide the encryption code see

Par. 0024.

13. Regarding Claim 20, Johnson discloses the analyzer to perform data flow

analysis of source code to dynamically obtain program operators see Par. 0021;

code transformer coupled to the analyzer to apply data transformation to select

region of source code to provide encrypting complier-generated code based on

operators see Par. 0019.

14. Regarding Claim 21, 25,Johnson discloses the cipher based on program

operators see Par. 0020.

15. Regarding Claim 22, 26, Johnson discloses the engine to encrypt/decrypt the

selected region based on references to variable identified in the selected region

see Par. 0026.

16. Regarding Claim 23, 27, Johnson discloses the heuristic to select the selected

region and the references see Par. 0032-0034.

17. Regarding Claim 24, Johnson discloses the DRAM having the source code see

Pr. 0079; analyzer to perform data flow analysis of source code to dynamically

obtain program operators see Par. 0021; code transformer coupled to the

analyzer to apply data transformation to select region of source code to provide

encrypting complier-generated code based on operators see Par. 0019.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. Claims 1-5,16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable

over US Patent 6931634 to Croix in view of US Patent 5339419 to Chan et

al.(hereinafter Chan).

20. Regarding Claim 1, 16, Croix discloses the applying of transformation to portion

of source to provide a encrypting complier generated code see Col 3 Ln 62-Col 4

Ln 4 & Fig.1-2. But Croix does not disclose the obtaining of operators from the

code and transforming the code based on the operators. However, Chan

discloses the obtaining of operators from the code and transforming based on the

operators see Col 11 Ln 37-46 & Col 12 Ln 67- Col 13 Ln 20. Chan's invention

involves converting an source code into an intermediate code, ANDF, based

source code that the complier processes, HPcode-Plus, thereby generating an

assembly code that is independent of machines. It would be obvious to one

having ordinary skill in the art at the time of the invention to include the obtaining

of operators from the code and transforming based on the operators in the

invention of Croix in order to have an standardized encryption process that is

secure and unique to the code as taught in Chan see Col 47 Ln 8-15 & Col 13 Ln

5-31.

21. Regarding Claim 2, 17, Croix discloses an sub-file from a file which is encrypted

with the file generate an encrypted compiler generated code see Abstract & Col 2

Ln 23-51.

22. Regarding Claim 3-5, 18-19, Croix does not explicitly disclose the deriving from

source code a complier-generated operator for data transformation. But Chan

discloses the deriving from source code a complier-generated operator to be

used for encryption see Col 4 Ln 27-37 & Col 3 Ln 10-20. And further, the

intermediate instructions convert directly to theIt would be obvious to one having

ordinary skill in the art at the time of the invention to include the deriving from

source code a complier-generated operator to be used for encryption in the

invention of Croix in order to increase low-level security as taught in Chan see

Col 4 Ln 38-45.

23. Claims 6-8, are rejected under 35 U.S.C. 103(a) as being unpatentable over US

Patent 6931634 to Croix in view of US Patent 5339419 to Chan et al.(hereinafter

Chan) further in view of US patent 2004/0115860 to Johnson et al.

24. Regarding Claim 6, Croix nor Chan explicitly discloses two references for each

variable pair to encrypt and decrypt between two references, and associating two

data values with each variable pair for encryption and decryption. However,

Johnson discloses the two references for each variable pair to encrypt and

decrypt between two references, and associating two data values with each

variable pair for encryption and decryption see Par. 0021.It would be obvious to

one having ordinary skill in the art at the time of the invention to include the two

references for each variable pair to encrypt and decrypt between two references,

and associating two data values with each variable pair for encryption and

decryption in the invention of Croix in order to iteratively encrypt the data as

taught in Johnson see Par. 0022.

25. Regarding Claim 7-8, Croix nor Chan explicitly discloses the iteratively forming

matching pairs of data values for each variable pair and further of creating

interlocking Feistal networks in each iteration. However, Johnson discloses the

iteratively forming matching pairs of data values for each variable pair and further

of creating interlocking Feistal networks in each iteration see Par. 0022 & Par.

0028. Further, Johnson discloses the enabling of detection of usage of one or

more redundant computations and in response to change in network provisioning

for corruption of unrelated data values relative to data values see Par. 0025-

0028. It would be obvious to one having ordinary skill in the art at the time of the

invention to include the Feistal networks for pair of variables in detection of

usage of redundant instances in the invention of Croix in order to disrupt

automated analysis of data flow as taught in Johnson see Par. 0029.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

See Notice of Reference Cited

27. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Venkat Perungavoor whose telephone number is

571-272-7213. The examiner can normally be reached on 8:30-5:00. If attempts

to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Gilberto Barron can be reached on 571-272-3799. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

28. Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

free). If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 800-786-

9199 (IN USA OR CANADA) or 571-272-1000.
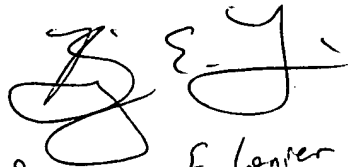
Venkat Perungavoor

VP

2/15/2007

Examiner
Art Unit 2132

Benjamin E. Lanier
Examiner AU 2132